**Detailed List of Skills for the Unit 2, Part 1 Notes – Atoms and Molecules**

AP Biology

For this notes packet, you should be able to…

1. Describe the difference between the three subatomic particles (protons, neutrons, and electrons) with respect to their location within the atom, their charge, and their mass.

**Location within the Notes:** #5-8

**Questions on Assignments that Relate to this Skill:** N/A

1. Identify the atomic mass, atomic number, number of protons, number of neutrons, and number of electrons for a particular atom given its information from the periodic table of elements.

**Location within the Notes:** #6 and #10

**Questions on Assignments that Relate to this Skill:** #3 in the Notes Questions

1. Compare and contrast isotopes and ions.

**Location within the Notes:** #9 and #11

**Questions on Assignments that Relate to this Skill:** #2 in the Notes Questions

1. Compare and contrast ionic bonds and covalent bonds.

**Location within the Notes:** #15

**Questions on Assignments that Relate to this Skill:** #4 in the Notes Questions

1. Predict the charge that an atom will have when it participates in an ionic bond based on the number of electrons in its outer energy shell (i.e. valence electrons).

**Location within the Notes:** Not very clear in the notes, we can discuss this in class

**Questions on Assignments that Relate to this Skill:** #2 in the Identifying Bonds Worksheet

1. Describe how the relative electronegativities of two atoms determine whether a bond between these two atoms is non-polar covalent, polar covalent, or ionic.

**Location within the Notes:** #16 (and the information given at the top of the Identifying Bonds Worksheet)

**Questions on Assignments that Relate to this Skill:** #1 in the Identifying Bonds Worksheet, #1 and #2 in the Review Packet (Must Knows)

1. Define a hydrogen bond (think H-NOF) and explain how a hydrogen bond is different from a covalent or ionic bond. Also, be able to identify the partially positive atom (i.e., H) and partially negative (i.e. N, O, or F) atom within a hydrogen bond.

**Location within the Notes:** #18

**Questions on Assignments that Relate to this Skill:** #1 in the Notes Questions, #3 in the Review Packet

1. Rate the following bond types with regard to their relative strengths: polar covalent, non-polar covalent, hydrogen, and ionic.

**Location within the Notes:** #18

**Questions on Assignments that Relate to this Skill:** #1 in the Notes Questions, #4 in the Review Packet

1. Define chemical reaction, reactants, and products.

**Location within the Notes:** #19

**Questions on Assignments that Relate to this Skill**: #5 in the Notes Questions